

A black and white photograph of a tree frog perched on a large, textured rock. The frog is facing right, with its large, dark eyes and light-colored body with dark spots clearly visible. In the upper right corner, a string of small, round beads hangs down. The background is dark and textured, suggesting a natural habitat.

ANIMAL KEEPERS FORUM

SEPTEMBER 2000

The Journal of the American
Association of Zoo Keepers, Inc.

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35th Anniversary - 1974 - 2009

MISSION STATEMENT

(Revised April 2009)

American Association of Zoo Keepers, Inc.

The mission of the American Association of Zoo Keepers, Inc. is to advance excellence in the animal keeping profession, foster effective communication beneficial to animal care, support deserving conservation projects, and promote the preservation of our natural resources and animal life.

This month's cover features a drawing of a Red-eyed Tree Frog (*Agalychnis callidryas*) drawn by Rosa (Eunche) Lee, a 14-year-old student from Calgary, AB, Canada. Rosa's painting was selected as the winner in her age group in the "Get to Know Your Wild Neighbors" art contest that you can read more about in this issue of *AKF*. Red-eyed Tree Frogs have bright red eyes and are a really bright color of green with blue and yellow striped sides and orange toes. They come from the neotropical rain forests of Central America. This species of frog is completely arboreal or tree dwelling and they are excellent jumpers. These frogs rarely descend to the ground and move in a very stealthy and deliberate manner. They are completely nocturnal. They rest on the undersides of large leaves during the day, coming out at night to feed. They have long, powerful jumping legs, suction cups on the toes, and a very short backbone. Females (about 3 inches long) are larger than males (about 2 inches long). They are named for their large, bulging, red eyes. These bright eyes may serve to startle predators. These tree frogs spend their lives near water (usually rivers) because they must return to the water to lay their eggs. Adult males make a loud croaking sound to establish their territory and to attract females. Female Red-eyed Tree Frogs lay eggs on the undersides of leaves (that are right above the water); the male fertilizes the eggs as they are deposited. When the eggs hatch into tiny brown tadpoles, they fall into the water below. The tadpoles breathe with gills and swim with a tail. As they mature, they lose their tail, they develop lungs (for breathing air), and they become brightly colored. The Red-eyed Tree Frog is a carnivore eating mostly insects, catching them with its long, sticky tongue. It also eats other small invertebrates and sometimes will even eat other small frogs. Its enemies include some bat species, snakes, and birds. Red-eyed tree frogs are not endangered, but their rainforest habitat is shrinking at an alarming rate primarily due to manmade activities. Thanks, Rosa!

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKF*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 785-273-9149; FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com< If you have questions about submission guidelines, please contact the Editor.

**Deadline for each regular issue is the 10th of the preceding month.
Dedicated issues may have separate deadline dates and will be noted by the editor.**

Articles printed do not necessarily reflect the opinions of the *AKF* staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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**AAZK website Address: www.aazk.org
BFR Website: <http://aazkbfr.org>**

Scoops & Scuttlebutt



Calling All Artists and Authors!

We are currently soliciting artwork for consideration as future covers for *Animal Keepers' Forum*. While we will occasionally use color photos on the cover, as with this issue featuring artwork from the Get to Know Your Wild Neighbors Program, we will continue the long-standing tradition of featuring original member-generated artwork. If you are interested in submitting artwork please remember that drawings should be crisp and clean (pen and ink works best) and may be submitted as high resolution jpgs or tifs or sent as hard copy via regular mail. Artwork submissions do not have to be sized for AKFcover--we can take care of that aspect. If sending by mail, please use cardboard stiffening to make sure it does not get damaged in transit. Original artwork will be returned upon request. Send artwork files electronically to akfeditor@zk.kscoxmail.com

Artists are asked to include a brief paragraph about the species featured in their artwork for the About the Cover section, as well as their name, title, institution and contact information (daytime phone or email address).

We are also soliciting manuscripts from keepers on any and all aspects of the profession--animal husbandry, enrichment, operant conditioning/training, behavioral research, articles on reproductive successes at your zoo, etc. You may submit manuscripts electronically as MS Word documents only to the editor's email address (akfeditor@zk.kscoxmail.com). Authors are encouraged to also send photos to accompany their articles and these may be sent as jpg or tif attachments to the above email address. Please note that we need high resolution photos (300 dpi) for best reproduction. Authors should include proper photo credit and a suggested caption for each photo submitted. Make this your year to share your knowledge and experiences on the job with your peers.

A Note of Thanks from Save the Wild Chinchillas - submitted by Amy Deane, Executive Director

I wanted to thank the National Capital Chapter of the American Association of Zoo Keepers (AAZK) for their support of our projects. It is the donations like these that keep projects like mine up and running. And, your work at AKF is how people like NCCAAZK learn about my work. Thank you both AKF and NCAAZK for your help in conserving and educating people around the world about wild chinchillas.

Below is a copy of the letter received in our Miami office. The letter reads:

To Whom It May Concern:

Our National Capital Chapter of the American Association of Zoo Keepers (AAZK) holds open houses several times a year in various locations of the zoo. This past month our Small Mammal House hosted an open house with a book and bake sale and designated all proceeds to go to Save the Wild Chinchillas. During the open house not only was there a bake and book sale for zoo employees and volunteers, but also several small mammal encounters and training demonstrations. We are pleased to tell you that all 100% of our profits are going to your foundation and the grand total is \$400. We know that you will put the money to good use spreading the message of the need for conservation of the wild chinchilla.

Please continue your incredible work with trying to save this endangered species.

Erin Stromberg
Great Ape Keeper at Smithsonian's National Zoo
President of NCAAZK

Orangutan SSP® Husbandry Manual - Environmental Enrichment

An online enrichment catalog for the Orangutan SSP® Husbandry Manual is going to be developed later this year to become a part of the Environmental Enrichment chapter. This is going to be an exciting project that gives orangutan caregivers the opportunity to share their creativity, likes and dislikes, secrets to success and more! Once this catalog is created, it will be updated 1-2 times each year.

As always, to make this endeavor spectacular, your help is needed! From now through September 15, 2009 submissions are being accepted for the first posting to the catalog. What we would like to collect is:

- a description of the enrichment device and its purpose for the orangutan
- photo(s)
- Diagram and instructions on how to build the device
- Photo(s) of orangutan(s) using the device

If you have any thoughts or suggestions for what also might be included, don't hesitate to contact me. I hope to have a preview of this for viewing at the workshop this year. Upon compilation of materials received by this 1st deadline, the submission will be made to create the first catalog. As you develop new ideas and devices, please continue to send them as I will be then collecting for the next update to the catalog.

Submissions should be made to me off list so as not to bog down the listserv from other topics being discussed. Drawings or diagrams can be scanned and sent as an attachment. If you would like to send items via mail, please see zoo address below. Please send to: Danielle.Fogarty@czs.org

Thanks in advance for your participation in this effort!

Danielle Fogarty, Primate Department
Chicago Zoological Society – Brookfield Zoo
3300 Golf Rd., Brookfield, IL 60513

Mark Your Calendars!

National Zoo Keeper Week for 2010 will be celebrated from July 18th - 24th. Start making your plans now to recognize the profession at your zoo or aquarium with an informational table on zookeeping and zoo keepers, a special event for the zoo keeper staff at your facility, or whatever you can dream up! Closer to the actual dates, 2010 National Zoo Keeper Week logos and other information will become available for you to utilize. Watch for announcements in *AKF* and on the AAZK website at www.aazk.org.

Speaking of the website, if you haven't visited it for awhile, do so soon and you will find a whole new look and navigation system. The AAZK Board and staff continue to look for ways to improve the site and also to add more useful information to the Members Only section of the website. If you have not created an account to allow you access to this non-public section, you are encouraged to do so and see what all is available there. A few of the things included in the Members Only section are the Zoonotic Diseases Handbook, ASZK Husbandry Guidelines, People Skills for Animal People and The Water Column archives, downloadable conference proceedings as well as a listing of all current AAZK Chapters (searchable by State) and much, much more. Visit often and watch it grow!

A word of caution for those with member accounts - be aware that if you change information (like a name change or address change) in your Members Only account profile, this information is **not automatically received at the Administrative Office** where the database for mailings of *Animal Keepers' Forum* is maintained. If you have a name or address change, be sure to send it in an email to Barbara Manspeaker at aazkoffice@zkkscoxmail.com.

Correction from AKF Editor

In the Enrichment Options column in the August 2009 issue of the *Forum*, on page 332, the photographer was incorrectly identified as Jim Schultz, Oakland Zoo Staff Photographer. The correct photo credit should read: Jim Schulz, Staff Photographer Chicago Zoological Society. Our apologies for this error.

Old Journal Has New Look

The International Reptile Conservation Foundation (IRCF) invites you to an online preview of the newly re-named and now full-color journal entitled *Reptiles & Amphibians: Conservation and Natural History*. Enjoy informative and entertaining content written by experts in the field, and profusely illustrated with high quality photographs. In addition to feature articles, regular contributions include conservation alerts, travelogues, profiles of prominent herpetologists, historical perspectives, husbandry features, commentaries, book reviews, summaries of important articles published elsewhere, and a "focus on conservation," highlighting a conservation effort worthy of support.

Join the IRCF and help support conservation of the world's herpetofauna and the natural habitats and ecosystems that sustain it. As a member, you will receive four copies of *Reptiles & Amphibians*:

Call for Papers for AKF Dedicated Issue on Avian Husbandry and Breeding

Zoo and aquarium animal collections are experiencing a crisis in sustainability. Without successful husbandry and breeding we stand to lose the diversity that is vital to great collections. This is being strongly felt in the avian world. In March of 2010 there will be a dedicated issue to avian husbandry and breeding. We are seeking articles pertaining to what has worked, and often more importantly, what has not worked in the art and science of avian husbandry and breeding. By sharing information we can begin to make collaborations and work towards building stronger and sustainable populations.

Papers should be submitted electronically in MS Word **only** to akfeditor@zk.kscoxmail.com. Please put Avian Special Issue in your subject line. Papers should be no more than 10 pages in length. Any charts or graphs should be submitted as separate jpg or tif files along with the manuscript. We would encourage photos of your animals to include and these should also be submitted electronically as either jpg or tif files. Please make certain all photos are high resolution (300 dpi)

If you cannot submit your materials electronically, you may send them on a disk or CD to: Dedicated Issue, AAZK, Inc., 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. If you cannot submit your photos electronically, you may also send 3x4 inch prints. Be sure to include proper photo credit and suggested captions for each photo are appreciated.

You should also include your complete contact information including address, email and daytime phone number where you may be reached if we have questions concerning your submission.

Deadline for receipt of articles for consideration is
January 5, 2010

From the President

Nature Deficit Disorder and the Zoo Keeper

When I was a child growing up in Cleveland, there was a large area of forest and fields located where Interstate 480 now runs. This greenspace lay directly between my street and the railroad tracks that still parallel the freeway. The woods and tracks were made off-limits by the parents of the neighborhood kids, but as you might imagine, our sense of adventure often led us on clandestine trips into the forbidden forest. Occasionally, we would follow the verdant corridor down to what we called "The Big Woods", now known as the Ohio and Erie Canal Reservation of the Cleveland Metroparks. Fishing poles in hand, we would pick wild blackberries, catch frogs, and enjoy the scenery of this natural oasis in the heart of the city. The Big Woods was where I spotted my first pheasant, raided apple trees in an abandoned orchard, and earned bragging rights for the largest catfish. Unfortunately, my trips to the woods ended when my mother found a snapping turtle that I had placed in our bathtub. Thankfully, my experiences in the Big Woods, though cut short, were enough to lay a foundation for appreciating nature throughout my life, eventually culminating into a career.

Nature Deficit Disorder is a term coined by respected author Richard Louv about the "cumulative human costs of alienation from nature". When the bulldozers erased my neighborhood greenspace, lost was a local connection to wildlife for the residents, young and old alike. As urban sprawl and the steady creep of concrete transform landscapes across North America, generations of children have grown up unfamiliar with natural and unblemished greenspaces and waterways. Furthermore, many local schools do not teach sustainability, conservation ethics, appreciation for nature, and field-oriented ecology. Standardized testing forces teachers to focus on the structure of an atom, the components of DNA, and the differences between mitosis and meiosis. All important things, but lost is the *personal connection* to nature. How can a child appreciate and become an advocate for something they have never experienced?

Zoos, aquariums, and nature centers can help fill the void. Education has become one of the top priorities of our industry, and in many of our institutions, you are considered the frontline educator. We know that our institutions provide the urban public opportunities to learn about endangered species, conservation issues, and even the chance to see a farm animal for the very first time. We also know the average zoo visitor considers the conservation messages conveyed by zoo keepers to be of the most credible and preferred methods for learning about these topics during their visit. The best zoo keepers take the science of our profession and convey it in a manner that is fun, informative, and personal to the average visitor.



Part of AAZK's mission is to provide you with resources and a forum to support your efforts in conservation and education. Recently we entered into a partnership with Robert Bateman's *Get to Know Your Wild Neighbors* program. The program, including the accompanying contests, and how you can get involved, is explained inside this issue of the *Animal Keepers' Forum*. Your Board of Directors and the AAZK Staff are continually working to provide you with new ways to achieve your goals and objectives in animal care, science,

education, and conservation. I think the best way to explain why the AAZK Board of Directors felt it was important to support this program is to share with you Robert Bateman's own words:

Robert Bateman states "Time spent in nature is an experience from which we can all benefit. The natural world is dynamic and full of surprises. You can take the same walk in the woods every day and it will always be different; if you pay attention, there will be something new for you to discover. That is why the contest is such an important tool. Not only does it encourage creativity, it also teaches [children] to examine the tiniest, most fascinating and significant aspects of nature. By paying attention to the smallest details of natural life, we will find the path to protecting our collective future on Earth."

Consider supporting this program. Most importantly, re-commit to your role as a frontline educator. While you are at it, go out and experience the local nature yourself. You can't be a bird expert if you don't know the difference between an indigo bunting and a scarlet tanager. Every herpetologist needs to hear a chorus of amphibians before they can describe it. The entomologist needs to sift through the leaf litter before they can choose their favorite click beetle. Zoo professionals sometimes mirror the urban public they are trying to educate, suffering a little nature deficit disorder themselves. Get out there, a natural world of wonder and fascination awaits.



Shane Good
President, AAZK, Inc.

(Editor's Note: Robert Bateman's article may be found on pages 372-374 of this issue of AKF. Also, the cover art for this September 2009 issue of the Forum is by one of the art contest winners from the Get To Know Your Wild Neighbors program. The Red-eyed tree frog was done by Rosa (Eunche) Lee, a 14-year-old ninth grader from Calgary, Alberta, Canada. You may view other winning artists' work at the following website: <http://www.gettoknow.ca/en/contest/winners.php>

NEW AAZK PRODUCTS COMING SOON!

Organic cotton ladies t-shirts and men's long-sleeve shirts with our "eye movement" design as well as logo embroidered baseball caps will be on sale at the 2009 Conference at special introductory prices.

Check out the AAZK website this month for a sneak preview on styles and pricing. Conference pricing for current AAZK product will be in effect as well, so send your orders along with conference attendees to get the best deals!

Coming Events

Post Your Coming Events Here
email to: akfeditor@zk.kscoxmail.com

September 12-18, 2009 - AZA Annual Conference - Hosted by the Oregon Zoo in Portland, OR. For more information visit www.aza.org

September 24-29, 2009 - Joint 36th National AAZK and 3rd International Congress on Zookeeping Conference - in Seattle, WA. Hosted by the Woodland Park Zoo and the Puget Sound Chapter of AAZK. Check out www.pugetsoundaazk.org/ for conference information.

September 25-30, 2009 - 2009 Association of Zoo Horticulturist's Annual Conference - in Jacksonville, FL. Horticulturist Certification Courses (Soils and Design 1) offered September 26. For registration information, go to www.azh.org.

October 1-6, 2009 - 29th Annual Association of Zoo Veterinary Technicians Conference - in Jackson, WY. If you would like more information, please visit www.azvt.org or contact Virginia Crossett via at virginia.crossett@louisvilleky.gov



October 4-8, 2009 - 64th WAZA Annual Conference - in St. Louis, MO. Hosted by the St. Louis Zoo at the Renaissance Grand Hotel. For more information please visit [http://www/waza.org](http://www.waza.org)

October 15-18, 2009- Elephant Facility Design Workshop - to be held at the Dublin Zoo in Ireland. Will include presentations on the following topics: A Day in the Life of an Elephant - Developing a Design Mission; The Grand Design, an Overview of Elephant Habitat Design; Giant Footsteps, The Development of Dublin Zoo's Elephant Programme; Laying the Foundations - A History of Elephant Management; Reaching the Target - Elephant Training at the Dublin Zoo; The Winding Path - the History of Zoo Architecture; To Err is Human - Lessons Learned from the Design of the Kaziranga Forest Trail; The Bigger Picture - A Day in the Life of Dublin Zoo's Elephant Herd; Male Order, Bull Elephant Habitat Design; and Important Additions to the Elephant Habitat

Design. Presenters will be Alan Roocroft of ELEPHANT BUSINESS and Grant Jones of Jones & Jones (Seattle, WA), and staff from the Dublin Zoo. For more information & booking contact Aoife Keegan at 00353 (1) 4748997 or email elephantdesign@dublinzoo.ie

October 21 - 25, 2009 - The Zoological Registrars Association (ZRA) 2009 Annual Conference "Foundations for the Future", will be hosted by Zoo Boise in Boise, Idaho. The Annual Conference Program will begin with leadership training and the Icebreaker on Wednesday, October 21. General Sessions will be held on Thursday, October 22 and Saturday, October 24 and will feature topics like Record Keeping, Permits and Wildlife Legislation, Animal Transport and Records and Collection Management. There will be a variety of formats for presentations including individual papers, workshops, panel discussions and poster presentations. Zoo Day will be held on Friday, October 23 and will culminate with a special dinner celebrating ZRAs' 25th Anniversary. A special evening at Bogus Creek Outfitters featuring a cowboy-style dinner, cowboy poetry, Wild West shoot out, karaoke and a bonfire has been scheduled on Saturday, October 24, and the 2009 Annual Conference will end on Sunday, October 25 with additional ZIMS sessions. ZRA, Zoo Boise and the Owyhee Plaza Hotel welcome delegates to Idaho. Please visit the ZRA website at www.zooregistrars.org or contact the 2009 Annual Conference Host, Corinne Roberts/ Registrar for Zoo Boise, at (208) 384-4260 ext. 101 or by email at cxroberts@cityofboise.org. If you have questions about the 2009 ZRA Annual Conference Program, please contact the Program Chairman, Pam Krentz/Registrar for Cleveland Metroparks Zoo at (216) 635-3361 or by email at pak@clevelandmetroparks.com

November 6-8, 2009 - Second International Bear Care Conference: "Advancing Bear Care '09" - to be held in San Francisco, CA. For more info see <http://www.bearcaregroup.org>

March 3-6, 2010 - International Association of Avian Trainers and Educators (IAATE) Conference in Albuquerque, NM. It's not too early to start planning to attend the 2010 IAATE Conference hosted by Avian Ambassadors in Albuquerque, New Mexico. The 2010 IAATE

Conference will provide a wonderful opportunity to learn more about avian training, show content, educational messaging, enrichment ideas, avian health and welfare from the leading authorities in the industry. Get ready for Conference Trips, Workshops, Visit the Rio Grande Zoo and Aquarium, and we are bringing back the Training Panel. **Stephen J. Bodio** is our Keynote Speaker. Steve was born and educated in Boston and has lived in Magdalena, New Mexico, for over twenty years. He has traveled extensively in Europe, Africa, and especially Asia. His book ***Eagle Dreams*** is about the Kazakh horsemen of Mongolia



International Association of
Avian Trainers and Educators

. It is the journey to and in writing this book that Steve will talk about with his slide presentation. We also have **Susan G. Friedman, Ph.D** with a featured paper on Saturday morning! Dr. Friedman is a psychology professor at Utah State University with a special interest in applied behavior analysis (ABA), the technology of behavior change so effective with human learners. Over the last decade, she has pioneered the dissemination of ABA principles, procedures and ethical standards to improve the quality of life for animals. For more information visit www.IAATE.org and start planning today!

This year, Online Registration is available! Go to www.IAATE.org for all registration and conference details. Online registrations must be submitted and Mail-in registrations must be postmarked by February 6, 2010. Walk-in registrations will be accepted at the conference.

Hotel Reservations must be made by February 14, 2010 to get the special IAATE rate.

DEADLINE FOR ABSTRACTS IS OCTOBER 1st, 2009. That is soon, get your abstracts in to CMA924@aol.com.

April 15–18, 2010 - 4th Otter Keeper Workshop - the Cincinnati Zoo in Cincinnati, Ohio will host. This year the focus of the workshop will be expanded to include all of the otters managed under the Otter SSP® North American river otters, Asian small-clawed otters, African clawless, African spot-necked and giant otters. Keepers working with any of the species are welcome to attend. Topics will include: captive management issues, enrichment, training, water quality, health care, nutrition, diet, hand-raising, exhibit design,

lots of sharing of information between keepers.

Registration will be \$75 and the deadline is December 15, 2009. Spots fill up fast so please register early. A waiting list will be maintained once the workshop is filled. Due to the popularity of the workshop, priority will be given to first time attendees. Please just one registrant per institution. No refunds after January 15, 2010. Accommodations: A hotel near the Cincinnati Zoo or the Newport Aquarium. Room negotiations are ongoing. Roommates are encouraged. You will be matched if you indicate that you wish to have a roommate. Information can be found on: www.OtterSpotter.com

For more information contact: David Hamilton at Seneca Park Zoo, 2222 St. Paul St., Rochester, NY 14617; phone: 585-336-2502; 585-266-5775 fax dhamilton@monroecounty.gov

April 25-30, 2010 - Animal Behavior Management Alliance (ABMA) Annual Conference - In Pittsburgh, PA. The theme of this 10th Anniversary Conference is "Defining a Decade: Animal Management - Past, Present, and Future".

Conference programming includes: Dr. Vint Virga, a Veterinary Behaviorist as keynote speaker, formal presentations, numerous workshops and seminars, a poster session, and site visits to animal facilities. All conference details can be found at www.theabma.org. The conference will be held at the Hilton Pittsburgh located in downtown Pittsburgh. Mention that you are with the ABMA and receive a special room rate of \$119/night Reservations must be made by March 23, 2010 at 412-391-4600. Contact Nicole Begley at nicole.begley@aviary.org or 412-323-7235 ext 216 with questions.



August 30-September 3, 2010 - 7th International Penguin Conference - in Boston, MA. Hosted by The New England Aquarium. For info email ipc@boston@neaq.org

September 28-October 2, 2010 - 20th International Zoo Educators' (IZE) Biennial Conference - at Disney's Animal Kingdom, Orlando, FL. For more information, please visit <http://www.izea.net>

AAZK Announces New Members

New Professional Members

Debbie Finkman and Heather Harl, **Smithsonian's National Zoological Park (D.C.)**; Bethany Grim, **Duke Primate Center (NC)**; Emily Johnson, **Nashville Zoo at Grassmere (TN)**; Rachel Johnson, **Hattiesburg Zoo (MS)**; Rachel McKee, **Mesker Park Zoo (IN)**; Tonya Venstad, **Dakota Zoo (ND)**; Whitney Buchman, **Lee Richardson Zoo (KS)**; Ann Van Cleave, **Audubon Nature Institute Insectarium (LA)**; Kristy Eaker, **Acadiana Zoo (LA)**; Michelle McCartha, **Chimp Haven (LA)**; Jamie Lawson and Melanie Lough, **San Antonio Zoo (TX)**; Kimberly Peterson, **Sea World of California (CA)**; Julie Borowski, **San Diego Zoo (CA)**; Cyrus Kayvan, **San Francisco Zoo (CA)**; Molly Feldman, **Coyote Pointe Museum (CA)**; and Anna Belden, **Sequoia Park Zoo (CA)**. *We no longer print the names of those Professional Members who do not list their facility on their membership application.. (There were four this month).*

New Commercial Members

Desert Plastics, LLC, Albuquerque, NM
Ginny Pomeroy, Sales Manager

Renewing Commercial Members

Premium Nutrition Products, Mission, KS
David R. Morris, President

Renewing Institutional Members

Peace River Refuge & Ranch
Zolfo Springs, FL

Alabama Gulf Coast Zoo
Gulf Shores, AL
Patti Hall, Director

Renewing Contributing Members

Amy Roberts
Brookfield Zoo, Brookfield, IL

Gretchen Ziegler
Sequoia Park Zoo, Eureka, CA

The Friends of the Kaw Announce New Website ~ Kansas Riverkeeper

The Kansas River (also called the Kaw) begins at the confluence of the Republican and Smoky Hill rivers near Junction City and flows 171 miles to Kansas City, where it joins the Missouri River.




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The site features images by Suzanne L. Collins of the frogs and toads, turtles, and snakes that can be found along the Kansas River and its sandbars. If your browser accepts pop-ups, you can click on the photograph of each critter to see the Kansas Herpetofaunal Atlas species account and access audio files of their calls (if they have calls) and see maps of where they occur in Kansas.

Visit the KANSAS RIVERKEEPER web site at

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Robert Bateman Brings His Message to America's Youth

**AAZK Members can join the conversation
and enhance their education programs**

Contributed by the Robert Bateman Get to Know Program

According to the United Nations, half of the world's population now lives in urban areas. As the world population climbs to 9.2 billion in 2050, all population growth will occur in urban areas and only 30% of humanity will remain in rural environments¹. This shift will continue to have significant environmental consequences (both positive and negative) – in terms of pollution, habitat destruction, energy use, availability of natural resources, etc. It will also continue to be directly responsible for the “extraordinary disengagement of humans from the natural environment” that has emerged over the last few hundred years² and worsened most rapidly in the last two decades.

Already, the stories, statistics, and studies of this disengagement from nature are shocking. Recent studies consistently show that urban youth spend little or no time in nature, and instead spend their free time using computers, playing video games, or participating in other indoor activities³. “I like to play indoors better ‘cause that’s where all the electrical outlets are,” said one infamous study participant⁴. As one meta-study noted, “with parks and public nature reserves often their only means of accessing nature, the majority of urban-dwelling individuals may have all but forgotten their connections with the natural world”ⁱⁱ.

Consider the issue of vocabulary. We know that the number of plant and animal names that a person knows “depends on how much time [they] spend interacting with other species in their subsistence activities.” For city dwellers, that number is very small. Some farmer-gatherers in the tropics of the Philippines use over 2,700 words to name and classify biota, whereas the typical member of a temperate zone urban street gang has a nature vocabulary of less than 200 words. Last December, it was discovered that the latest (2007) edition of the *Oxford Junior Dictionary* (aimed at young children in the UK) no longer included the names of over ninety common plants and animals, including “beaver”, “dandelion”, “poppy”, “ivy”, and “willow” – because, according to the publisher, today’s children live in an urban environment where these words are no longer as relevant as newly-inserted words like “blog” and “MP3 player”⁵.

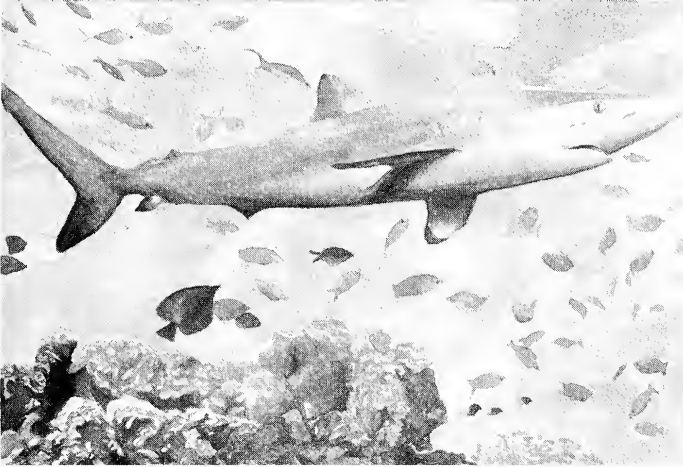
To say the least, these symptoms are indicative of a serious and worsening problem. There are numerous studies showing that children who spend less time in nature suffer from a variety of social, emotional, mental, and physical health problems compared with children who are regularly in natureⁱⁱⁱ. Studies of how urbanization affects environmental attitudes in particular are lacking, but one recent study did find that youth who spend little time outside demonstrate “less pro-environmental attitudes and reduced participation in environmentally friendly behaviors as adults”^{iv}. This should come as no surprise; how can we expect people to care about animals, plants, or natural environments that they never see? How can we have a meaningful discussion about biodiversity when people don’t even know the names of local species?

World-renowned wildlife artist Robert Bateman launched the “Get to Know” Program in Canada in 2000 after asking himself that question. Even before author Richard Louv coined the term *nature deficit disorder* (to describe the “cumulative human costs of alienation from nature, including diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses”¹), Get to Know was working to combat this alarming trend. Based on Mr. Bateman’s philosophy that “caring for the planet begins with getting to know our neighbors of other species,” this unique program is

¹ Louv, Richard. *Last Child in the Woods*. Chapel Hill, NC: Algonquin Books 2005.

committed to finding new fun-filled tools that motivate youth to go outdoors and “get to know” their wild neighbors.

Over the last ten years, the Get to Know (GTK) Program grew into a major Canada-wide program that works with a diverse group of partners and uses the latest research to deliver innovative and timely



This watercolor of shark, coral and fish was a 2009 winner in the Get To Know Art contest. The artist is 15-year-old Jihee Ha of Fredericton, New Brunswick, Canada.

initiatives that educate and empower the next generation. After a decade of success in Canada, the Robert Bateman Get to Know Contest is ready to expand into the United States. We are now partnering with AAZK, the US Forest Service, the US Fish & Wildlife Service, the National Wildlife Federation, and other major partners to expand into California. Get to Know’s flagship art, writing, and digital photography contest will inspire American youth to get out into local parks and urban greenspaces and become inspired by the flora and fauna that inhabit California’s diverse natural areas. Youth will translate

this inspiration and passionate connection into artwork that bears a vital message — children who learn in “nature’s classroom” tap into a new kind of healthy lifestyle and nurture a boundless imagination.

This year, as entries to our 2009 art, writing, and photography contest were submitted to our Canadian contest, we noticed that many youths again chose to visit local aquariums and zoos for inspiration. These facilities provide a fantastic opportunity for children to get up close and personal with their wild neighbors. The caliber of the submissions clearly demonstrates that the artwork, photographs, and writing we received are resulting in many additional visits to aquariums and zoos! It is the goal of the Get to Know Coordinators to bring our program and its resources to schools, zoos, and aquaria throughout the United States in the coming years.

The GTK Program is committed to providing resources and motivation to underserved and underprivileged young people, especially in high-density urban areas where opportunities for youth to interact with nature are rare and poorly funded. By engaging children in rewarding educational experiences and opening their eyes to a whole new (natural) world of possibilities, each GTK initiative elicits meaningful change in the community and lays the groundwork for a dedication to wildlife conservation. Opportunities for learning about diverse species and their habits and environments are most accessible in America’s many zoos and wildlife institutions.



This watercolor of a pair of warblers was a 2009 winner in the Get To Know Art contest. The artist is 16-year-old Jie Gao of Vancouver, British Columbia, Canada.

The GTK Program will work actively with AAZK members to help deliver the opportunities available for at-risk youth to reconnect with nature and realize their potential for a healthy, happy future. By encouraging youth to visit AAZK facilities to participate in GTK initiatives, both AAZK and GTK will benefit—and the educational environments for youth will be further strengthened.

Specifically, AAZK Chapters can get involved in the program in the following ways:

- Handing out GTK Contest application forms, and discussing with children how to create accurate and realistic depictions of animals, their behaviors, and their habitats
- Encouraging youth not only to view animals during GTK contest participation, but to actively take an interest in issues facing each species
- Meeting with educational directors to integrate the comprehensive GTK learning materials and opportunities into current/monthly/regional/national programs by AAZK and at AAZK facilities (this may include usage of GTK's interactive CD, a multimedia kit of Virtual Hikes, species profiles, and other interactive instructional tools)
- Providing rewards or incentives to youth who demonstrate an active interest in nature, the environment, and species found at AAZK facilities; this could include discounts on admission, prizes, or incentives in the form of bonus/special tours, or materials (i.e. engaging educational pamphlets or other fun info for youth)
- Encourage youth to use knowledge acquired at the zoo to explore local and regional greenspaces for themselves (i.e. once a youth has learned about a bird species' habits at the zoo, they can use this knowledge to more easily locate and view these animals in a nearby park)
- Promoting upcoming GTK events and initiatives, such as our Natural Treasure Initiative, which launches this fall: <http://www.gettoknow.ca/en/naturaltreasure/>

As two-time NBA MVP Steve Nash has said of the Program: "Being outside is our best connection to each other—we're all on the same earth, regardless of circumstance, position or chance. By getting outdoors and learning firsthand about the environment we can grow an understanding of what the planet needs to be healthy, and start to care about it enough to make a better, more sustainable future for all of us."

We couldn't agree more! The Get to Know Team would like to commend AAZK for their continued role in fostering environmental education and stewardship in America's youth. We are excited to join forces with AAZK chapters throughout North America, to further expand the reach of our contest and invigorate the already rich and stimulating learning environments.

**For more information on how to get involved, please contact: Braden MacDonald,
Get to Know Program Coordinator, 250-861-9474 bmacdonald@gettoknow.ca**

(Endnotes)

ⁱUrbanization statistics from AP article "UN says half the world's population will live in urban areas by end of 2008" (26 February 2008). Available from the *International Herald Tribune* at <http://www.ihf.com/articles/ap/2008/02/26/news/UN-GEN-UN-Growing-Cities.php>

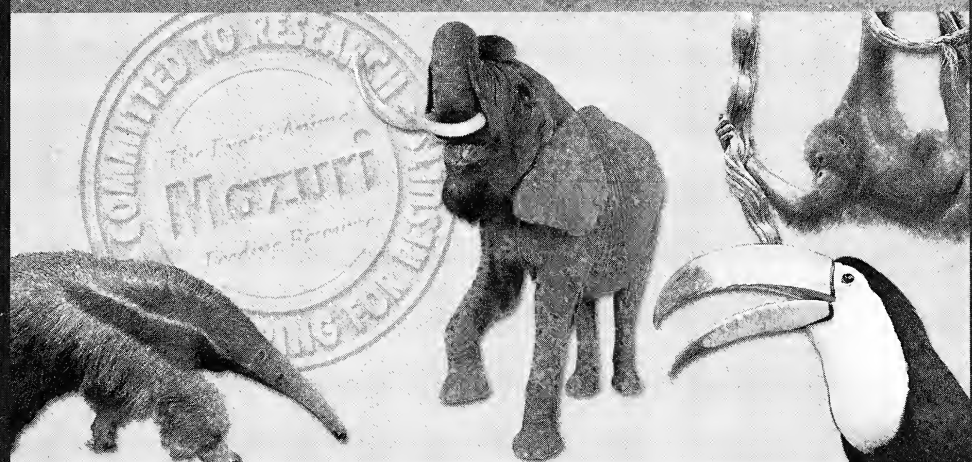
ⁱⁱMaller et al. "Healthy nature healthy people: 'contact with nature' as an upstream health promotion intervention for populations", *Health Promotion International* 2006 21(1):45-54

ⁱⁱⁱSee the dozens of studies compiled by the Children and Nature Network, www.childrenandnature.org

^{iv}Wells, Nancy M. and Kristi S. Lekies. (2006). "Nature and the Life Course: Pathways from Childhood Nature Experiences to Adult Environmentalism." *Children, Youth and Environments* 16(1): 1-24.

^vSee "B stands for blog, not beaver", *The Globe and Mail*, 10 December 2008.

Editor's Note: You may view other winning artists' work in full color at the following website: <http://www.gettoknow.ca/en/contest/winners.php>



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The AAZK Behavioral Husbandry Committee Presents

Training Tales...



Where you can share your training experiences!

“I Said “Exit Stage LEFT” You Idiot!” (Or, Is Your Cue Really Telling Your Subject What You Think It Is?)

By

Jason Pratte, Lead Keeper, Zoo Atlanta
AAZK Behavioral Husbandry Committee Member

The AAZK Animal Training Committee strives to support the mission of AAZK, Inc. by providing information and learning opportunities for animal care professionals to facilitate the use of operant conditioning and other training techniques, to achieve behavioral management goals and excellence in animal care.

This submission is a continuation of our ‘Training Tips’ series, as a way for trainers to review basic training terminology and methods to further sharpen their training skills. This month, we will be looking at choosing and establishing a cue, some of the common problems trainers may have experienced and how to resolve some of those issues.

Think back on training sessions you have participated in or observed. Did you ever notice times when the animal just wasn’t “getting” what it was the trainer was trying to teach them? Or that it takes 20 repeats of the cue to elicit the desired behavior? Or that your well-trained animal is asked for one behavior, but then often offers a different one? These might be issues related to the cue.

A cue, or conditioned stimulus, is the signal that a trainer chooses to indicate that they want the subject to perform a particular behavior. It can be anything that the subject you are working with can perceive. The most commonly used cues are verbal commands (auditory) and hand signals (visual), but trainers have used light, odors, touch, music, vibration, tool, etc. The list of possible cues is limited only by the trainer’s imagination, but based on physiology, animals may respond better to some cue stimuli than others. When establishing which cue is going to be associated with a desired behaviour, stop and think: is the cue *distinct*? Is it recognizable by the animal, from other cues being used by trainers, and from stimuli the animal is exposed to every day? For example, let’s say you want to train an okapi to come in from the exhibit when you ring a bell. You want the bell to be the cue that means “come into the barn,” but your okapi spend their day out on exhibit listening to the zoo train chug past, with the engineer ringing a bell randomly. The bell is likely going to lose effectiveness as a cue (if it ever works in this situation). The okapi would likely respond to sounds associated with the trainers themselves: doors opening, calling her along with the bell, etc. Be sure the cue is something unique, distinguishable from the environment and easily associated with the behavior you want to teach.

Likewise, ensure that the different cues you use remain distinct from one another. When I first began

working with the pandas at Zoo Atlanta several years ago, I began training them an “open mouth” behavior. I used the verbal cue “open” paired with my thumb and fingers being spread apart in front of their face. The training went well, though slower than I expected. I turned the behavior over to another keeper to help maintain it, and then we both began experiencing problems. We would



Training a giant panda to “open”. (Photo courtesy of the author)

ask for “open” and often get a paw placed on the mesh instead. We would get frustrated, and the pandas even more so. It was a new, inexperienced keeper, unfamiliar with the training program, who caught what was happening. She asked one day if I meant for the end of the “open” cue (fingers spread apart from thumb) to look like the cue for “paw” (the trainer’s hand presented in front of the panda as if we were telling them to “halt”). I stopped and looked at the cue from the bear’s perspective, and lo, she was right. To the bear, they looked almost identical, with the trainer presenting essentially an open hand to them. We changed the “open” cue to just the thumb and forefinger spreading apart, and within a few weeks the behaviors were being presented as asked.

If you are having obvious confusion or frustration demonstrated from your training subject, take a step back and examine your cues. Ask another keeper to watch your session to observe, specifically your cues and actions. Are you using two whistle blasts to signal something different from one blast? And what if the animal only hears one because of ambient noise? Or is not sure if it heard two or three? Keep the cue simple, within the animal’s perception, and distinct.

Now a bit about stimulus control. **Stimulus control** is when a stimulus (cue) increases the probability of a behavior occurring (conditioned response) because that behavior was historically strongly reinforced in the presence of the cue (AAZK/AZA, 2003: **Stimulus Control** – A behavior is said to be under stimulus control if it meets 3 conditions: 1) It is immediately offered following the S^D ; 2) It is offered only when preceded by the correct S^D ; 3) It is not offered in the presence of another S^D . [S^D = cue]). There are a lot of factors involved in stimulus control, but since they are well described by Karen Pryor in her book “Don’t Shoot the Dog” we’ll touch on just the most basic aspects here.

Allow me to illustrate some of how this works with another anecdote. There was this Sun Bear I worked with that had his medications put into a peanut butter sandwich twice daily. Due to the relatively medieval keeper area and lack of access to the animals, this sandwich was tossed to the bear in his moated exhibit. He would see a keeper coming with the sandwich (same schedule every day), and run to the front, precariously balancing on the edge waiting to try and catch it. Often as not, he would lunge and miss, sending his treat and meds bouncing off his nose into the moat. This is of course unacceptable (especially when you were then left with a bear trying to get INTO the moat for his sandwich). So I started randomly going outside and throwing raisins, working with a “sit” cue. I captured the behavior

of him sitting on exhibit, and threw him the treats while blowing a whistle and yelling “Good sit!”. After a few weeks the bear would sit when I asked, I could throw the sandwich, and it would land in front of the bear safely. A co-worker came up one day when I was feeling particularly proud of this routine, and remarked, “What’s the big deal, you didn’t teach the bear to sit”. No, I didn’t teach him to sit, I taught him to sit ON CUE for a reward. That is part of stimulus control.

There are some common problems with cue response (an aspect of stimulus control) that all trainers run into. Having to issue the cue repeatedly (“Boomer come. Come. No, now. Come. Come on boy. Come. Here. To me. Come...”). Or the existence of a huge delay between cue and behavior (“Oh it’s okay. He always takes 10 or 15 minutes to fetch the ring from the bottom of the pool.”) These are learned responses on the animal’s behalf. Somewhere along the way, they were taught that they didn’t have to “come” or “fetch” until they felt like it. As a trainer, you need to be sure your cue has been learned as “please execute this behavior when I ask.” Superstitious behaviors can fall into this category. Ever trained an animal that opens its mouth on cue, but always puts their paw up at the same time? It is likely that the trainer unintentionally shaped the open mouth behavior while the animal was holding up that paw.

A similar issue with cues arises in presentation. We discussed making them identifiable and distinct, but *where and when* the cues are presented can become a big deal. If you ONLY ever train an animal for shoulder injections in a squeeze area, your training is likely going to suffer major setbacks if the



Various tools used to cue different behaviors in tigers.

(Photo courtesy of the author)

animal has to be involuntarily restrained in the same squeeze (learned from an aversive situation). Or, if you want to be able to inject the animal while they are outside, in a shift hall, or some area that is not the squeeze, the animal might suddenly have no clue what you are asking, or regress several steps. Likewise if you only train an animal at 10 in the morning, good luck getting a response at 3 in the afternoon. Once you have associated a cue with a behavior, slowly and gently alter the environment/parameters. If you can present a specific cue and receive the

appropriate response in various locations, at various times, and under differing circumstances, then you are much closer to achieving stimulus control.

The cue is a very important part of the training process (yeah, I know, “we get it Sherlock”). Keep these basic parameters in mind when developing a training program, or when trying to re-examine an existing one. Modify your vocal commands, tools and physical signals (watch that body language! Clever Hans phenomenon anyone? Link: en.wikipedia.org/wiki/Clever_Hans). Are you using three colors of “stations” for an animal that may not distinguish color well? Does your one target stick mean up, follow, down, over, come, nose, eye, ear...? Create some new, distinct tools that the animal can learn to mean different things, and make training less confusing for them.

The cue is a learned signal and its effectiveness is based on how the trainer reacts to the animal’s behavior. Remember, most training problems are a result of communication problems between the

trainer and subject. If your cue is ineffective or could use some improvement, it becomes obvious in the behavior step. What exactly have you taught them that your cue means?

"You get what you reinforce, not what you want" (copyright 2002, Bob Bailey)

References:

AAZK Animal Training Committee; AZA Behavioral Advisory Group. [2003].

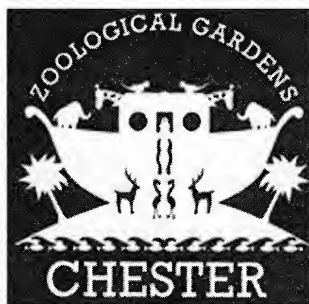
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Pryor, K.[1999]. Don't Shoot The Dog [rev. ed.]. Bantam Books, New York.

You are invited to submit material for the Taining Tales Column. Drawings or photos of training are encouraged. Contact Jay Pratte at jpratte@zooatlanta.org for more details or to submit an entry.

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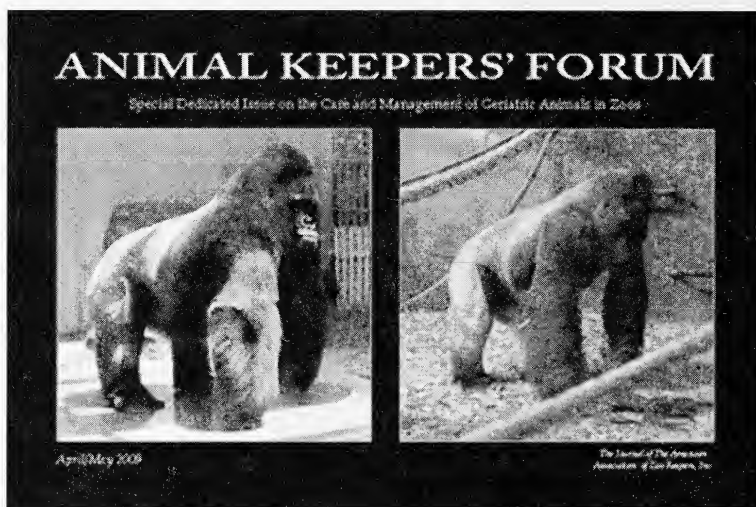


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Animal Planet Educates Zoo Visitors with Innovative Kiosks

Animal Planet and the Association of Zoos and Aquariums (AZA) has announced the placement of interactive ZOOTUBE kiosks at zoos in 10 U.S. cities. The kiosks, which will feature behind-the-scenes zoo footage, fun conservation facts and Animal Planet exclusives, are meant to enhance visitors' experiences by giving them an insider's look into the animals that they experience at the zoo. The first partnership of its kind, the AZA and Animal Planet ZOOTUBES bring a national entertainment brand into zoos across the country.

"Exciting Animal Planet content coupled with the up-close experience of live animals is an unbeatable combination," said AZA President and CEO Jim Maddy. "The Association of Zoos and Aquariums and Animal Planet are great, natural partners."

"Animal Planet prides itself on rich, engaging content, and these kiosks are no exception," said Marjorie Kaplan, President and General Manager of Animal Planet. "ZOOTUBES will not only inform and entertain zoo-goers nationwide, they will remind visitors that exciting animal programming can be found 24 hours a day on Animal Planet."

Each ZOOTUBE kiosk is equipped with an interactive touch screen that allows visitors to choose their area of interest. The "Zoo Scoop" -- a series of behind-the-scenes vignettes hosted by Animal Planet personality, Zak George -- gives viewers information about animal nutrition, behavioral enrichment and other zoo preparation activities. "The Dirt on Animals" breaks down facts about various animals. Another content area called "Animals Save the Planet" features a humorous and light-hearted take on how humans can make a difference in lives of animals and the environment by making small changes in their everyday lives. Animal Planet also tapped into its roster of shows to provide additional content for the kiosks. While zoo-goers are in a curious and engaged state of mind about animals, the kiosks will provide an extension of their experience by building on the exhibits.

"ZOOTUBES are a first - the first nationwide effort to place interactive kiosks in zoos and the first time zoos have joined with a national entertainment brand, Animal Planet, to develop high-quality content for on-site use," added Maddy.

The initial roll-out of ZOOTUBE kiosks includes the zoos listed below, with five more planned to roll-out by the end of the year:

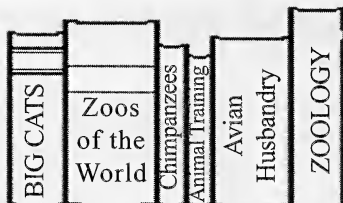
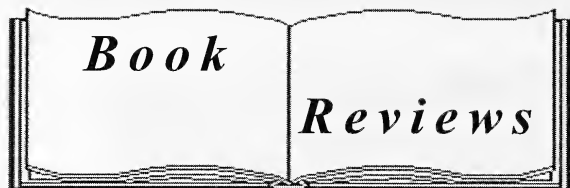
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Source PRWeb, 10 August 2009



The Biology of the Xenarthra

Edited by Sergio F. Vizcaino and W.J. Loughry

Published March 2008, University Press of Florida, 15 Northwest 15th Street
Gainesville, FL 32611-2079

ISBN# 978-0-8130-3165

Hardback, 370 pages Price: \$100.00

*Review by Anthony Mason, Keeper
Omaha's 'Henry Doorly Zoo
Omaha, NE*

The Biology of the Xenarthra sheds light on the unusual animals of Xenarthra, which includes sloths, anteaters, and armadillos. This group is often misunderstood or just understudied. That being said, this is the first comprehensive book written on this group of mammals since 1985, so there is a lot of new information being presented here. All of the writers obviously care a great deal about the research they have done. This is conveyed in the text through the great attention to detail given to different topics in the book.

This book begins with the evolution of Xenarthra and a look at the past, present, and future of the research surrounding this particular group of mammals. There is a good amount about past research and researchers. It was very enlightening to read about the current research going on. There is a lot of solid information about researching classification based on morphology as well as genetics. The possibilities for future research are looked at also. It is truly wonderful to see what is being done in an animal area we might not generally consider.

The book also covers the very fascinating area of fossil Xenarthra. In reading through this I was able to gain a firmer grasp on where living members of this group came from and their extinct relatives. The chapter about the now extinct ground sloths is especially fascinating. From there it covers the living Xenarthra, first with multiple chapters on Physiology and Genetics, then with chapters on conservation. I found the whole chapter dedicated specifically to leprosy in nine-banded armadillos to be particularly remarkable. I also think for most people the chapters on conservation will be of special value, considering the very rampant (and very necessary) 'green' mentality sweeping the nation. The book is rounded out with various chapters covering ecology and behavior. These are also a must for those who work with these animals.

Overall this is a very interesting and well put together book. I definitely came away from reading it with a better understanding of armadillos, sloths, and anteaters. If you work with these mammals or are interested in them at all, I would highly recommend acquiring this book. The Biology of the Xenarthra thoroughly motivated me to look more into these animals and gave me new perspective on a group we still have much to learn about.

Understanding Animal Welfare: The Science in its Cultural Context (UFAW Animal Welfare)

By David Fraser, 2008

Oxford : Wiley-Blackwell Publication, 350 Main St., Malden, MA 02148

ISBN#978-1-4051-3695-2

Paper 324 pgs. \$70.00

*Reviewed by Bob Cisneros, Animal Care Supervisor
Children's Zoo/San Diego Zoo, San Diego, CA*

The well-being of the captive animals is an imperative that animal care professionals world-wide share. In his book *Understanding Animal Welfare: The Science in its Cultural Context*, David Fraser takes

an historical framework of modern animal welfare. This outlook provides past views of empirical, ethical, and cultural perspectives that have shaped today's stance on animal care.

The book is divided into three sections. The first section covers the cultural context from which modern welfare views arose. Fraser covers the role of animal welfare as far back as biblical times and ancient Greece, citing many passages that provide the cornerstone for a myriad of viewpoints that have shaped today's modern thought on the subject. Behind these value-based positions underlie many different positions on what is most effective animal welfare.

The second section covers the methods of animal welfare science. Particularly noteworthy was the author's coverage of the physiology of stress and pain as well as the role of science with regards to identifying abnormal behavior and determining its origin. Within this section, Fraser asks the question:

"If we keep animals in a way that does not fully match their adaptations,
what kinds of animal welfare problems may arise?"

These welfare concerns present a challenge for all of us in the animal care field. At any one time we are examining the effective states of our animals; exhibits and habitats are modified, allowing animals to exercise some form of adaptation. Any kind of change presents an issue of adaptation for our animals.

The final section of the book involves drawing conclusions about animal welfare and the logic involved in this decision making process. According to the author, different perspectives may point to different problems, leading to different solutions, completely different from what some other group or culture may determine regarding animal welfare. Here the author places a very strong emphasis on the role that both facts and values play at determining policies regarding animal welfare.

Understanding Animal Welfare: The Science in its Cultural Context is valuable text for any zoo library. While this book may not be suggested reading for all animal care professionals, it is very appropriate for those either involved with or interested in animal welfare issues and the integration of these principles. For those not interested in Fraser's collection of historical-ethical perspectives, the chapters relating to stress, effective states, and natural living will find a place of relevance for all animal care professionals.

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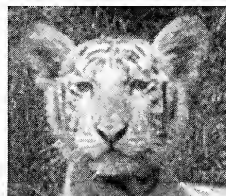
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Training a Camel to Cush Using Operant Conditioning

By

Angie Adkin, Assistant Lead Keeper
Lincoln Park Zoo, Chicago, IL

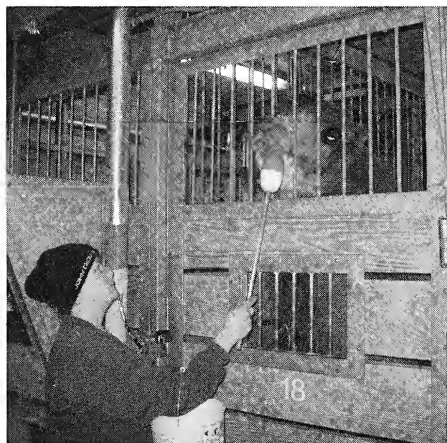
Background:

Standing 8ft. tall and weighing 1772lbs.¹, Indie is an 11-year-old female Bactrian camel [*Camelus bactrianus*] that was born at Lincoln Park Zoo (LPZ). Prior to 2004, Indie had no formal operant-conditioning training nor was she halter trained as a youngster. Instead, Indie was mother-reared amongst a large herd of females in a protected-contact setting. Indie is a dominant female at LPZ who is extremely food motivated. I used both of these factors to my advantage when I started her operant-conditioning program.

In 2004, when I first met Indie, I began the process by feeding her carrots and conditioning her to get used to my presence. The formal operant-conditioning training started, in the fall of 2005, when I introduced her to the bridge. Within a few weeks after I introduced the bridge (whistle), Indie paired the bridge with food. She proved to be an eager participant in the operant-conditioning program.

Training Triumphs:

The stalls in the barn had horizontal oak boards with metal bar windows that give just a small access area for target training, which I felt was limiting Indie's training potential. After discussions with my managers, we installed a 2' x 3' [~ 0.6 x 0.9m] heavy-duty nylon net, known as a horse stall guard, across the stall door opening. This allowed Indie's head and neck to be more exposed for tactile desensitization (i.e. palpating, grooming, checking eyes/ears) when the stall door was opened while inhibiting her from exiting the stall. Additionally, it was determined that it would be best for me to enter the stall to work with Indie (with another keeper present for safety) when she was laying down sternally with all four of her feet tucked underneath her body. This position is referred to as a *cush* in the camelid world.



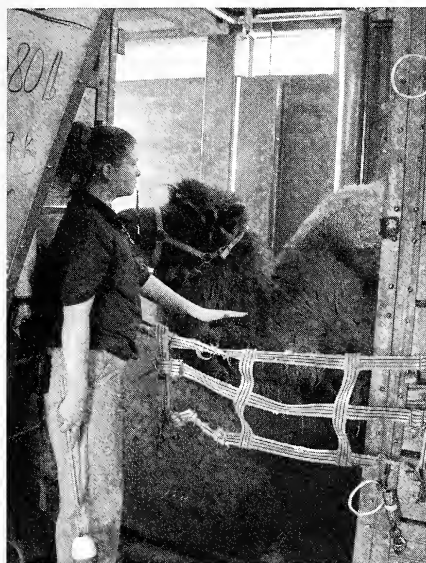
The author target training 0.1 Bactrian camel Indie
(Photo supplied by author)

Indie responded well to me entering her stall since animal keepers in the past had gone in with her in this position. However, since she had a tendency to be a bit assertive in a *cush*, I decided it was best to only give the primary reinforcer, food, at the end of the *cush* session. During the *cush* session, I used a secondary reinforcer of tactile scratches/ brushing to reward her. In the new protected-contact setup Indie's training flourished and evolved. It even included desensitizing her to a wearing a pink halter.

Who's Training Who:

So the training went on...until, one morning this past fall, I shifted the camels inside from their overnight yard and noticed that Indie was in a *cush* within 10 minutes after eating her morning grain ration. Typically, she would *cush* in the stall, but not until 30–60 minutes after coming into the barn. I thought to myself, hmmm, maybe she's just really eager to train today. So, I immediately reinforced her with her favorite fruits. At the moment, I realized that it might be possible to capture the *cush* behavior.

Historically, the traditional way to train a domestic camel to cush involves roping their legs to forcefully encourage them down. This training typically happens when they are youngsters. For Indie, this was not a plausible option. Thus, I put together a shaping plan to capture the cush behavior...but first, I had to encourage this early-morning cushioning so it would be possible to capture it.



Author cush training camel at Lincoln Park Zoo.
(Photo by Marisa Elizalde)

The camels are fed and kept inside their stalls for a few hours in the morning while a keeper cleans and prepares their yard. Undoubtedly, this is a busy time for all keepers, but feeding Indie a handful of treats when she was in the cush position only took a few minutes. Since I was just reinforcing her for being in a cush, I could go about my morning work and just feed her whenever I passed by with my wheelbarrow and saw her in a cush. I made it a point never to feed her if she was standing up. The results were amazing! Within a few weeks, she was cushioning just a few minutes after eating her morning grain. A few times, I tried offering Indie only half of her morning grain ration so that I could jackpot the other half when she was in a cush, but this only proved to frustrate her. Therefore, I just used extra carrot and apples from that point forward.

Capturing The Cush Behavior:

Finally, on a cold morning this past January, the big day arrived. I fed Indie her grain and walked away, as normal, to continue on with my duties. Except this time, I stood down the hallway out of her visual path and waited.

Since Indie is so training motivated, I assumed it would be best if I did not stand directly in front of her stall while waiting for her to cush, as this might cause more frustration. So, I waited...and, within 10 minutes, I could see her starting to lie down. As the excitement raced through my veins like tiny firecrackers filled with hope, I inched towards her to bridge this behavior. Unfortunately, the minute she saw and/or heard me, she popped up into a standing position. Although I was disappointed, I knew I had to walk away as to not reinforce the standing-up behavior.

The next day, I followed the same steps. Yet, as she was cushioning, I contained my excitement, waited and bridged when she was more settled in the down position. This time, she stayed down and earned a jackpot of her favorite treats! As I fed her, I used the verbal cue “down” with the visual cue of my hand, to begin the association process. I repeated the capturing method for the next two days.

On the fifth morning, I felt that it was time to try pairing the visual and verbal cues with the cushioning behavior. I waited for her to finish her grain, and I started a routine training session by asking her to “target.” I wanted this to set the stage for a positive training interaction. Next, I gave Indie the verbal cue “down” simultaneously with a visual cue of my left hand moving down—and waited. While I stood in front of her stall quietly waiting, she appeared to become frustrated and pawed the ground, urinated and circled the stall a few times. Although this lasted only five minutes



Author grooming camel Indie at LPZ.
(Photo by Andy Van Laan)

or so, it felt a lot longer to me. I offered the “down” cue a few more times to gain her attention and familiarize her with this new behavior request. My hope was that she would ultimately return to the last known spot of reinforcement, which was the cush position, and lay down in front of me.

I was almost ready to end the session, when all of a sudden she rocked forward a step, rocked back, paused and slowly lowered her enormous body down. As my eyes widened with delight, I bridged, jackpotted and praised.

Over the next few weeks, I continued asking for the cush behavior in the morning and shaping the behavior so she would cush immediately after being cued. This process took a few “time outs,” but overall it was a smooth transition.

Conclusion:

Indie’s training has continued to flourish and blossom. Indie will even do a cush for training demonstrations during tours. Also, this behavior has opened many doors for improving her care while protecting the staff’s safety. From grooming to routine veterinary health examinations, Indie’s appetite and motivation was successfully channeled to enhance her care for the rest of her life.

Acknowledgements:

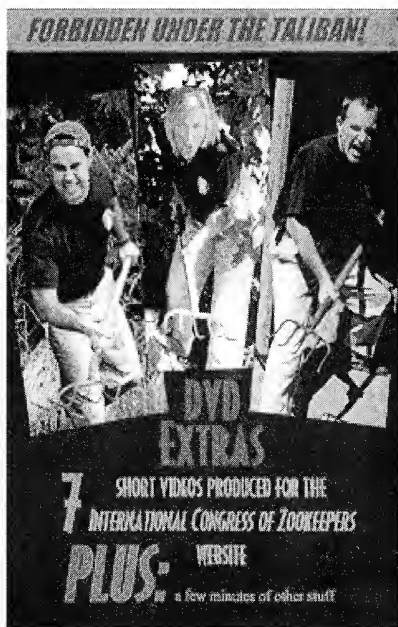
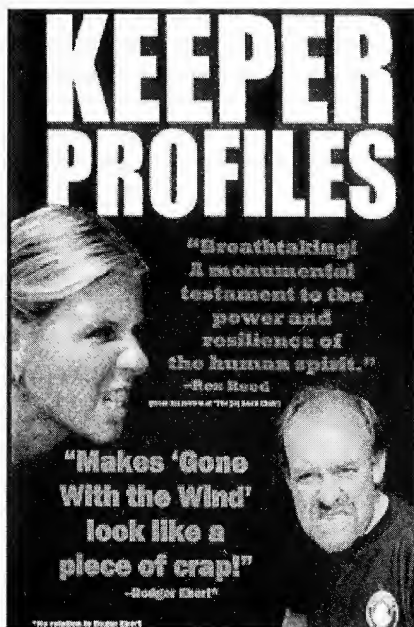
A special thanks to the keeper staff at Antelope/Zebra and the Farm-In-The-Zoo (presented by John Deere) for all their support and help throughout the years. Also, many thanks to Jonathan Miot, Assistant Director / Assistant Professor at the Sante Fe College Teaching Zoo and AAZK Behavioral Husbandry Committee member, for all his training advice and encouragement to write the article. Lastly, thank you to all of my proof-readers and editors at the Lincoln Park Zoo: Jason Martin, Keeper at AZ, Penny Reidy, Lead Keeper of AZ, Laszlo Szilagyi, Zoological Manager of AZ/FITZ, Dave Bernier, Curator of Mammals, and Megan Ross, General Curator.

¹ 2.43m tall weighing ~804kg

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Legless Frogs Mystery Solved

By Matt Walker, Editor, Earth News

Scientists think they have resolved one of the most controversial environmental issues of the past decade: the curious case of the missing frog legs. Around the world, frogs are found with missing or misshaped limbs, a striking deformity that many researchers believe is caused by chemical pollution. However, tests on frogs and toads have revealed a more natural, benign cause. The deformed frogs are actually victims of the predatory habits of dragonfly nymphs, which eat the legs of tadpoles.

In the late 1980s and early 1990s, researchers started getting reports of numerous wild frogs or toads being found with extra legs or arms, or with limbs that were partly formed or missing completely. The cause of these deformities soon became a hotly contested issue. Some researchers believed they might be caused naturally by predators or parasites. Others thought that was highly unlikely, fearing that chemical pollution, or UV-B radiation caused by the thinning of the ozone layer, was triggering the deformations.

Deformed frogs became one of the most contentious environmental issues of all time, with the parasite researchers on one side, and the 'chemical company' as I call them, on the other," says Sessions, an amphibian specialist and professor of biology at Hartwick College, in Oneonta, New York. "There was a veritable media firestorm, with millions of dollars of grant money at stake."

After a long period of research, Sessions and other researchers established that many amphibians with extra limbs were actually infected by small parasitic flatworms called *Riberoria* trematodes. These creatures burrow into the hindquarters of tadpoles where they physically rearrange the limb bud cells and thereby interfere with limb development. "But that was not end of the story," says Sessions.



Rana sylvatica metamorphs: two are "normal" and four have limb deformities, including missing limbs and limb duplications. (Photo: Joseph Kiesecker, Penn State)

"Frogs with extra limbs may have been the most dramatic-looking deformities, but they are by far the least common deformities found," he explains. "The most commonly found deformities are frogs or toads found with missing or truncated limbs, and although parasites occasionally cause limblessness in a frog, these deformities are almost never associated with the trematode species known to cause extra limbs."

The mystery of what causes frogs to have missing or deformed limbs remained unsolved until Sessions teamed up with colleague Brandon Ballenkee of the University of Plymouth, UK. They report their findings in the *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*. For a decade, Ballenkee and Sessions have collaborated on a series of art and science projects that image amphibians' bodies to show the detail within, the most recent of which is funded by the Arts Catalyst organization, based in London. As part of this work, Ballenkee and Richard Sunter, the official Recorder

of Reptiles and Amphibians in Yorkshire, spent time during the summers of 2006 to 2008 surveying the occurrence of deformities in wild amphibians at three ponds in the county. In all, they found that between 1.2% and 9.8% of tadpoles or metamorphosed toads at each location had hind limb deformities. Three had missing eyes. "We were very surprised when we found so many metamorphic toads with abnormal limbs, as it was thought to be a North American phenomenon," says Ballenkee. While surveying, Ballenkee also discovered a range of natural predators he suspected could be to blame, including stickleback fish, newts, diving beetles, water scorpions and predatory dragonfly nymphs.

So Ballengee and Sessions decide to test how each predator preyed upon the tadpoles, by placing them together in fish tanks in the lab. None did, except three species of dragonfly nymph. Crucially though, the nymphs rarely ate the tadpoles whole. More often than not, they would grab the tadpole and chew at a hind limb, often removing it altogether. "Once they grab the tadpole, they use their front legs to turn it around, searching for the tender bits, in this case the hind limb buds, which they then snip off with their mandibles," says Sessions.

Remarkably, many tadpoles survive this ordeal. "Often the tadpole is released and is able to swim away to live for another day," says Sessions. "If it survives it metamorphoses into a toad with missing or deformed hind limbs, depending on the developmental stage of the tadpole."

If tadpoles are attacked when they are very young, they can often regenerate their leg completely, but this ability diminishes, as they grow older. The researchers confirmed this by surgically removing the hind limbs of some tadpoles and watching them grow. These tadpoles developed in an identical way to those whose limbs had been removed by dragonflies, confirming that losing a limb at a certain stage of a tadpole's development can lead to missing or deformed limbs in adulthood. Adult amphibians with one hind limb appear able to live for quite a long time, Sessions says, explaining why so many deformed frogs and toads are discovered.



A dragonfly nymph believed to be among the predators of frog tadpoles causing adult frogs displaying deformed or missing limbs.

(Photo: Wikipedia)

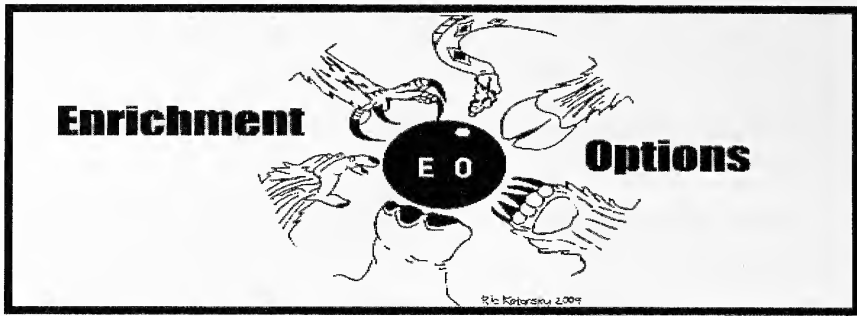
Why do the dragonflies like to eat the hind legs only? As toad tadpoles mature, they develop poison glands in their skin much earlier than those in their hind legs, which could make the hind legs a far more palatable meal. The front legs of tadpoles also develop within the gill chamber, where they are protected.

Sessions is careful to say that he doesn't completely rule out chemicals as the cause of some missing limbs. But 'selective predation' by dragonfly nymphs is now by far the leading explanation, he says. "Are parasites sufficient to cause extra limbs?" he asks. "Yes. Is selective predation by dragonfly nymphs sufficient to cause loss or reduction of limbs. Yes. Are chemical pollutants necessary to understand either of these phenomena? No." *Source: Earth News/BBC.com/The Center for North American Herpetology 31 July 2009*

Have You Sent AO Your E-mail Address Yet?

In order to better communicate with our members, and also save the Association the rising costs of mailings/postage, we are working to establish an AAZK member e-mail database. With such a database we would be able to send out electronic membership renewal notices, information about upcoming conferences, and other Association news. In order to make this work, we need your help.

Please send an e-mail to Barbara Manspeaker at aazkoffice@zk.kscoxmail.com with the words "AAZK Email Database" in the subject line. Please be assured that your e-mail address will not be shared with any other group or individual without your express permission. We are simply looking for ways to stay in touch with you as a member and to also help cut the costs of mailings and postage for the organization. It's all part of AAZK's continuing push to be more "green" in our administration. Thanks in advance for helping us achieve this cost-cutting goal.



EO Editors -

Julie Hartell-DeNardo, Oakland Zoo and Ric Kotarsky, Tulsa Zoo & Living Museum

Milk Crate Dusting Feeder

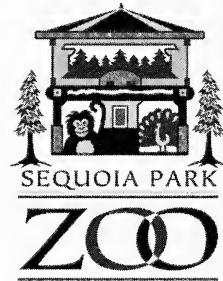
By

*Camden Bruner, Keeper Aid
Sequoia Park Zoo, Eureka, CA*

Are you looking for an easy way to provide more enrichment to your hoof stock? Try a milk crate dusting feeder. This piece of enrichment is enjoyed by many creatures at Sequoia Park Zoo, including donkeys (*Equus africanus asinus*), goats (*Capra aegagrus hircus*), llamas (*Lama glama*), alpacas (*Vicugna pacos*) and many more. It is designed for animals that do not have the ability to use a hand or paw to get into it, but instead have to use their face and mouth. The milk crate dusting feeder adds a simple twist to mimic the foraging behavior of grazing animals in brushy areas.

Things you will need:

- bendable black duster
- milk crate
- chain
- two quick clips



What to do:

- 1) Hang the chain from a doorway or from a wall so it hangs at a height appropriate for the animal being enriched to feed at.
- 2) Use a quick clip to attach the milk crate to the end of the chain (open end up). There should be enough slack in the chain so that the milk crate can swing easily.
- 3) Attach a quick clip to the middle of the duster and then bend the duster in half.
- 4) Attach the duster to the chain just above the milk crate.
- 5) Place enrichment food or the animal's diet into the milk crate.
- 6) Let the animals enjoy!



At left: A goat enjoys the milk crate dusting feeder at the Sequoia Park Zoo.

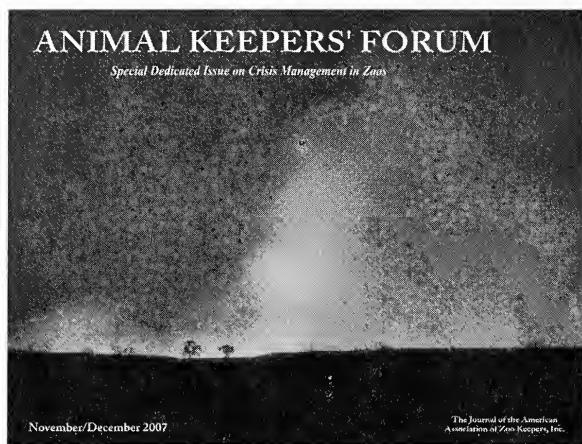
Below: Milk crate dusting feeders can be constructed very inexpensively, often from donated materials.

This feeder works well when other enrichment items are placed inside. A pinecone with peanut butter or shredded paper with apple slices works well. The milk crate needs to be inspected often to insure it is not cracking and the duster needs to be monitored to make sure it is not being eaten.

This feeder is removed from exhibits when it cannot be supervised.

Editor's Note: Ideas appearing in this column have not necessarily been tested by the editors for safety considerations. Always think ahead and use good judgement when trying new ideas. You are invited to submit material for the Enrichment Options Column. Contact the AKF Editor for a copy of the guidelines by emailing akfeditor@zk.kscoxmail.com. Drawings and photos of enrichment are encouraged. Send articles as MS Word attachments to the above email address. Photos, graphs or charts should be sent electronically as individual jpg or tif files. You may also mail a disk or CD of the article to: AKF Editor/Enrichment, 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054





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Crisis Management in Zoos

Special 136-page issue of *Animal Keepers' Forum* dedicated to Crisis Management in Zoos. This special issue contains papers designed to help animal-care facilities supplement their own crisis management protocols and provide information on how various plans have worked at other facilities.

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Conservation/Legislative Update

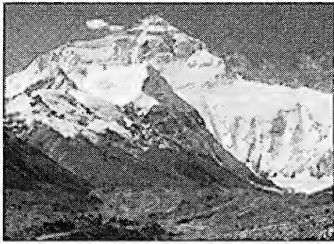
Column Coordinators: Becky Richendollar, North Carolina Zoo
and Greg McKinney, Philadelphia PA

This month's column was put together by
column co-coordinator Greg McKinney



Flying Frog among Hundreds of New Species Discovered in Eastern

Himalayas - Over 350 new species including the world's smallest deer, a "flying frog" and a 100 million-year-old gecko have been discovered in the Eastern Himalayas, a biological treasure trove now threatened by climate change. A decade of research carried out by scientists in remote mountain areas endangered by rising global temperatures brought exciting discoveries such as a bright green frog (*Rhacophorus suffryi*) which uses its red and long-webbed feet to glide in the air. One of the most significant findings was not exactly "new" in the classic sense. A 100-million-year-old gecko, the oldest fossil gecko species known to science, was discovered in an amber mine in the Hukawng Valley in Himalayan regions of far northern Myanmar.



The WWF report 'The Eastern Himalayas - Where Worlds Collide', details discoveries made by scientists from various organizations between 1998 and 2008 in a region reaching across Bhutan and north-east India to the far north of Myanmar as well as Nepal and southern parts of Tibet Autonomous Region (China).

"This enormous cultural and biological diversity underscores the fragile nature of an environment which risks being lost forever unless the impacts of climate change are reversed," said Tariq Aziz, the leader of WWF's Living Himalayas Initiative. "People

and wildlife form a rich mosaic of life across this rugged and remarkable landscape, making it among the biologically richest areas on Earth. But the Himalayas are also among the most vulnerable to global climate change."

In December 2009 world leaders will gather in Copenhagen to reach an agreement on a new climate deal, which will replace the existing Kyoto Protocol.

"Only an ambitious and fair deal based on an agreement between rich and poor countries can save the planet and its treasures such as the Himalayas from devastating climate change," said Kim Carstensen, the Leader of the WWF's Global Climate Initiative.

Among the most exciting discoveries was the miniature muntjac (*Muntiacus putaoensis*), the world's oldest and smallest deer species -- standing just 60-80 centimeters (25-30 inches) tall and weighing about 24 pounds (11 kilograms). Scientists at first believed the animal found world's largest mountain range was a juvenile of another species, but DNA tests confirmed it was distinct and new species.



The Eastern Himalayas are now known to harbor a staggering 10,000 plant species, 300 mammal species, 977 bird species, 176 reptiles, 105 amphibians and 269 types of freshwater fish. The region also has the highest density of the Bengal tiger (*Panthera tigris tigris*) and is the last bastion of the charismatic greater one-horned rhino (*Rhinoceros unicornis*).

WWF aims to conserve the habitat of endangered species such as the majestic snow leopard (*Panthera uncia*), Bengal tigers, Asian elephants (*Elephas maximus*), red pandas (*Ailurus fulgens*), takins (*Budorcas taxicolor*), golden langurs (*Trachypithecus geei*), rare Gangetic dolphins (*Platanista gangetica gangetica*) and one-horned rhinos as well as thousands of plant and animal species left to discover in the Eastern Himalayas region.

'Eastern Himalayas - Where Worlds Collide' describes more than 350 new species discovered - including 244 plants, 16 amphibians, 16 reptiles, 14 fish, 2 birds, 2 mammals and at least 60 new invertebrates. Historically, the rugged and largely inaccessible landscape of the Eastern Himalayas has made biological surveys in the region extremely difficult. As a result, wildlife has remained poorly surveyed and there are large areas that are still biologically unexplored. Today further species continue to be unearthed and many more species of amphibians, reptiles and fish are currently in the process of being officially named by scientists. The Eastern Himalayas is certainly one of the last biological frontiers of Asia with many new discoveries waiting to be made. *Source: WWF, 10 August 2009*

Strategies are Under Way to Control Invasive Reptiles - Florida and federal officials are attacking the python problem with an approach that includes legislation, technology and public-private partnering. In 2008, Florida enacted a law that defines what the state views as Reptiles of Concern - Indian pythons, which include the Burmese subspecies (*Python molurus bivittatus*) and its closely related, and more cold tolerant, Indian rock python (*P.m.molurus*); the African rock python (*P. sebae*); the reticulated (*P. reticulatus*) and scrub pythons (*Morelia amethystina*); the green anaconda (*Eunectes murinus*); and one lizard, the Nile monitor (*Varanus niloticus*).

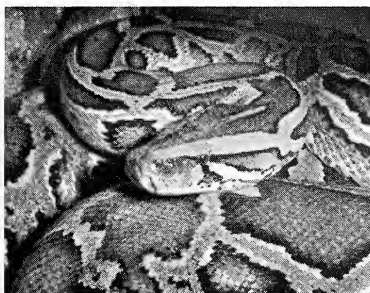
The Reptiles of Concern law is designed to slow sales of those reptiles to residents who are not serious, responsible collectors. Owners must be licensed and buy \$100-per-year permits to keep the animals under restricted conditions, after each has been implanted with a microchip.

"We've heard from retailers that that really discourages sales at the cash register. That is really slowing down that side of the equation," said Nick Wiley, assistant executive director of Florida's Fish and Wildlife Conservation Commission.

The state also is working with the National Park Service, including Everglades National Park and the Big Cypress National Preserve, on technological snake detection. Methods being studied range from beagles trained to sniff out pythons, trapping and telemetry tracking, to thermal imaging by remote-controlled airplanes that could detect the cold-blooded snakes basking at night along warm roadways.

Ron Clark, who heads up python control for the Big Cypress, which borders the Everglades and extends west to Everglades City in Collier County, is helping develop a pilot program called Partner with Hunters that will allow sportsmen and women in pursuit of deer and other game on public lands to kill invasive reptiles as well. Not only Burmese pythons but green anacondas have been discovered in the preserve, which also is frequented by thousands of hunters, as well as hikers on the southernmost sections of the Florida Trail. The program will include online training in reptile recognition - to preclude killing valuable and possibly endangered native species like snake-eating indigo snakes (*Drymarchon corais*).

Hunters would be asked to provide details on where they find pythons, and turning over snake stomachs for biologists to examine would be a potentially valuable option. An executive order could enable them to take pythons by the beginning of archery seasons opening in early September. Besides protecting and preserving Florida's native ecosystems, hunters also might get rewards. They would get to keep the euthanized snakes, which have potentially valuable skins and arguably delicious meat. Brian Wood, owner of All American Gator Products in Hallandale, has offered to purchase pythons from hunters for what he estimates at \$30 to \$60 for a gutted snake, depending on size. Wood makes and sells alligator apparel and accessories, and sees similar potential in python hides. He also believes he could develop a commercial market to Asian-themed restaurants for python meat, but there is a fly in that ointment. Python meat from the Everglades has been found to have mercury at levels too high to sell - just like alligators from Everglades waters. *Source: News-Press.com, Byron Stout, 9 August 2009*



Burmese Python
(Photo by Jan Sevich)

Rising Cancer Levels in Animals - Manmade chemicals are increasing cancer rates in animals - threatening some with extinction, according to a report published in *Nature*. The report, 'Wildlife Cancer: a conservation perspective', said high cancer levels were found in wildlife populations living in environments heavily contaminated with chemicals. It also said there was a danger that cancer levels could lead some species such as the Tasmanian devil (*Sarcophilus harrisii*) into extinction.

"Relationships between tumor development and environmental contamination are strongly suggested by scientific data," said report authors Denise McAloose and Alisa Newton citing the examples of liver and skin cancer suffered by fish living in industrialised waterways. In Beluga whale (*Delphinapterus leucas*) populations living in Canada's St. Lawrence Estuary, an area polluted by the aluminum smelting industry, cancer is second biggest cause of death.

The report also found a similarity in cancer rates and tumour types between different species and said wildlife populations could act as "important indicators of environmental discord."



Beluga Whale
(Photo by Brian J. Skerry)

The authors said in some cases the high levels of cancer may not be linked to manmade chemicals. It said Devil facial tumour disease, not known to be linked to pollution, had decimated the Tasmanian devil population by 53 per cent since 1996 causing it to be listed as an endangered species by IUCN in 2008. With predictions of a further 70 per cent reduction over the next decade the species could soon face extinction.

"If efforts fail and the Tasmanian devil disappears, it will represent the first known instance of a contagious cancer causing the extinction of a species," said the report. *Source: The Ecologist, 7 August 2009*

Feds Propose New Desert Tortoise Translocation Despite Past Disaster - The U.S. Bureau of Land Management and the Department of the Army released an environmental assessment that proposes to move more than 1,000 desert tortoises (*Gopherus agassizii*) from their current habitat, despite the previous disastrous desert tortoise translocation in 2008. To date, of the approximately 600 desert tortoises that were moved in 2008, 252 tortoises have died in the translocation area. Many of the deaths (169) were the direct result of canid predation. The Bureau provided the public only 15 days – until August 14, 2009 – to comment on the upcoming plan to move an additional 1000 tortoises.

"Fort Irwin's original translocation program was disastrous for tortoises, and it is unfathomable that they are proposing essentially the same disaster for 1,000 more," said Ileene Anderson, a biologist with the Center for Biological Diversity. "This species is already threatened with extinction, and this proposal is destined to kill off even more of the population."

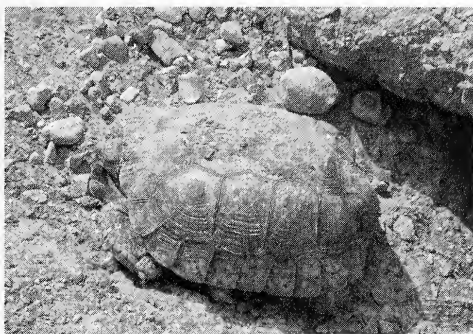
Desert tortoise translocation has never been attempted on such a large scale as it has for the Fort Irwin project. Even "successful" small-scale translocations have had a more than 20% mortality rate. Now, the translocations, along with other threats, are pushing the tortoise closer to extinction.

Having survived tens of thousands of years in California's deserts, desert tortoises have declined precipitously in recent years. The crash of populations is due to numerous factors, including disease; crushing by vehicles; military, industrial, and suburban development; habitat degradation; and predation by dogs and ravens. Because of its dwindling numbers, the desert tortoise – California's official state reptile – is now protected under both the federal and California endangered species acts.

Population-genetics studies have recently shown that desert tortoises in the western Mojave desert, including the Fort Irwin tortoises, are distinctly different from their relatives to the north, east, and south. This finding sheds new light on why increased conservation and translocation success is more important than ever for the Fort Irwin effort.

The Bureau of Land Management and the Army continue to downplay the impact of this project on the survival of the desert tortoise in the western Mojave recovery unit,” Anderson said. “Releasing the notice on a Friday afternoon, providing only a 15-day comment period in August, and not immediately notifying the interested public gives the perception that the Bureau and Army are not really interested in the public’s participation.”

Source: Center for Biological Diversity, 5 August 2009



Desert Tortoise

(Photo by Stephen Corn, USGS)

Bolivia Bans Wild and Domestic Animals in Traveling Circuses

- Bolivian President Evo Morales has signed the world’s first law prohibiting the use of both wild and domestic animals in traveling circuses. This is the first national law to ban the use of both domestic and wild animals in circuses. To date, Croatia, Singapore, Austria, Israel and Costa Rica have all banned wild animals in circuses. Similar bans on animal use in traveling circuses in Costa Rica, Finland and Denmark only prohibit the use of wild animals or certain species. The Bolivian law, signed earlier this month, was tabled by Congresswoman Ximena Flores of Potosi. It is expected to be published shortly.

The law arose as a result of evidence gathered during an undercover investigation by the nonprofit Animal Defenders International. Investigators found lions confined in a tiny cage on the back of a truck - two were pregnant but were forced to continue to perform. ADI videos show circus employees beating a lion in the circus ring with a baton and beating a caged lion with a metal pan. In one video, a caged lion was jerked by a chain around its neck by circus workers outside the cage, causing visible pain.

Three brown bears were kept in tiny compartments measuring just 2.5 x 3 meters (8.2 x 9.8 feet) inside a cage on the back of a truck. Their only exercise was the walk to and from the ring for their short performance. There were no safety barriers to protect the audience as the animals were made to dance, play dead and ride a bicycle. Other ADI videos showed circus employees beating a wolf and a llama in the circus ring.

The findings of the investigation were presented to the Bolivian Congress together with a report from Animal Defenders International on the scientific evidence of suffering of animals in traveling circuses, “The Science on Suffering.”

The new law bans the use of wild and domestic animals in circuses in the Bolivia, as their conditions and confinement are considered acts of cruelty. The circuses will be allowed one year to adapt their shows to a humans-only program and during this time, the government will issue regulations on confiscation and monetary sanctions for any breaches of the law.

ADI Chief Executive Jan Creamer said, “This is a truly historic day for circus animals. The undercover investigations, the scientific research and the hard work of our supporters in Bolivia has made a difference for animals that will reach around the world. Bolivia is the first country to ban animal circuses in South America and the first worldwide to ban both domestic and wild animals in circuses. We applaud President Evo Morales for setting the highest standard for animal protection for South America, which the rest of the world now needs to follow. We also salute the efforts of Congresswoman Flores and all the local organizations and who along with ADI worked tirelessly to ensure that the bill became a law.”

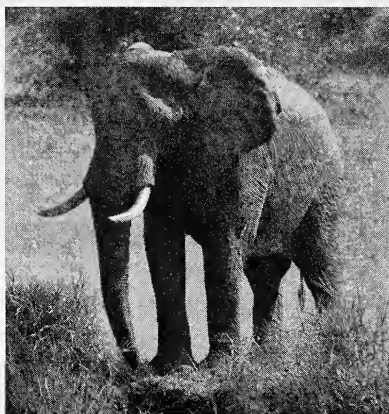
Groups in Bolivia who worked alongside ADI on the campaign for the new legislation include: Focomade, Vida Silvestre, Biosfera, Codac, Zooprama, Anima Naturalis-Bolivia, Gaia Pacha, EBA-Bolivia, and Animales SOS, among others.

In recognition of President Morales’ stand on the issue and his government’s prompt action, Animal Defenders International, ADI, has presented the Bolivian government with the Toto Award on animal protection and conservation. *Source: Environment News Service, 14 July 2009*

Swazi Elephants Get Vasectomies - In an effort to reduce the need for elephant culling, Disney Animal Kingdom vets have successfully performed vasectomies on seven Swaziland bull elephants (*Loxodonta africana*). The elephants were from the Hlane Royal National Park and Mkhaya Game Reserve, both owned by Big Game Parks. The parks carry small elephant herds. While the operation helped to pave the way forward in finding environmentally sound, financially viable and humane methods of elephant population control, park managers said the vasectomy operation was expensive and that similar efforts would be useful only in managing small herds.

Big Game Parks marketing manager Mike Richardson said: "I accompanied the ground crew, while Mick Reilly, the head of conservation, took to the air in a helicopter. Within a quarter of an hour, the call came in: 'The bull is down', and within five minutes, we had bushwhacked our way to the area where the immobilised elephant lay. A ground team cleared the bush, and five minutes later the elephant was suspended from the crane and having a harness fitted, before it was flipped the right way up. A sterile operating table was set up on the crane truck and, while the surgeons had their scrubs fitted, the flanks of the elephant were scrubbed and prepared for surgery."

Two 12cm incisions were cut into the elephant's flanks through which a 1.5m laparoscope fitted with a camera attachment and a light was inserted, allowing surgeons to operate. The elephant was then stitched up with stainless-steel trace wire, injected with an antidote before it lumbered to its feet and returned to its herd. Park authorities said they would monitor the elephants.



Bull African Elephant
(Photo by Lee R. Berger)

"The full impact - and ultimate success or failure - of the operation is only likely to be quantifiable in four to five years from now, due to the interval between calving in elephants", said Reilly.

SANParks vet Markus Hofmeyr confirmed that vasectomies would not be a solution in controlling elephant numbers in South African parks with large populations. *Source: The Star, 10 August 2009*

Global Warming Jeopardizes World's Most Diverse Marine Ecosystem - The Verde Island Passage, a narrow corridor of tropical waters in the Philippines that is considered the most diverse marine ecosystem in the world, is at risk of climate change and needs immediate protective action, scientists are warning. The scientists gathered in August in Batangas City, Philippines for a workshop organized by Conservation International, which is based in Washington, DC. After assessing the impacts of climate change on the Verde Island Passage, they painted a grim picture for the unique area.

Climate change will not only affect marine habitats and species but also fisheries and the tourism industry of this popular destination with consequences for the well-being of nearly two million people who rely on them for food and income.

"The marine habitats and species of the Verde Island Passage are already threatened by human impacts, like overfishing, pollution and coastal infrastructure development," said Dr. Giuseppe Di Carlo, Conservation International's marine climate change manager. "Climate change is intensifying these impacts, with severe consequences for the well-being of the people of the area, since they depend on fishing and tourism industry."

The Verde Island Passage has the highest concentration of marine species of any region in the world's oceans, including whale sharks (*Rhincodon typus*), giant clams (*Tridacna gigas*), and the iconic Banggai cardinalfish (*Pterapogon kauderni*).

But the panel of scientists cautioned that the impacts of climate change in combination with over-exploitation of resources already are threatening the marine habitats. They found that increasing ocean

temperatures are causing coral bleaching - meaning that corals can no longer support the array of plants and animals that rely on them. Sea level rise is causing coral drowning as the water gets deeper and coral growth is inhibited, the scientists say.

Sea level rise is also damaging mangroves - a key coastal habitat that protects the coastline and coastal communities from storms, reduces the impacts of floods and provides important habitats for juvenile fishes. And increased storm frequency and intensity is affecting the marine habitats as well as coastal settlements and the tourist trade in the area. Corals are becoming increasingly vulnerable to climate related threats as ocean temperatures increase, sea level rises and the ocean becomes more acidic as it absorbs the greenhouse gas carbon dioxide, a process that undermines corals' ability to grow their skeletons.

The scientists were joined by government officials and local people who discussed the changes in the environment, how the local community is being affected and what needs to be done to adapt. The islands are facing the collapse of fish populations, damage from aquaculture activities like shrimp farming, and falling tourist revenues.

"This workshop tried to offer concrete solutions to adapting to the effects of climate change, so that the unique biodiversity of this place can survive for future generations," Di Carlo said.

The scientists recommended a series of measures to protect the area, including ensuring that seagrass beds, mangroves and other habitats that provide important ecological services are included in protected areas. They also recommended the promotion of alternative livelihoods such as seaweed farming for area residents, and construction of ports on stilts to allow sediments to move freely, reducing sediment loads that harm corals and other coastal marine ecosystems. *Source: Environmental News Service, 10 August 2009*

Activists Say Malaysia is Losing Battle to Save Tigers - Malaysia is losing the battle to save its dwindling population of wild tigers (*Panthera tigris jacksoni*), a conservation coalition warned after a series of raids that netted tiger carcasses and bones.

'It is clearly time to admit that we are fast losing the battle to save our tigers to an army of smugglers and poachers intent on killing every last one,' said the Malaysian Conservation Alliance for Tigers (MyCat).

'They enter our protected areas with ease, and illegally trap, kill and export our wildlife with little fear,' said the alliance which includes WWF Malaysia and watchdog Traffic Southeast Asia.

MyCat demanded that Malaysian authorities take action to stop the illegal trade in tiger parts. It listed a series of seizures of dismembered tigers in recent months, from the Thai-Laos border right down to Malaysia itself, including three kilograms (six-and-a-half pounds) of tiger bones found in northeastern Kelantan state last month.



Officials display the tiger skins seized in the northern Malaysian state of Kedah, near the Malaysia-Thai border. (Photo: Reuters)

The coalition said that investigations into the seized tiger parts found that some were from sub-species not found in the wild in Asia, including the Siberian tiger (*Panthera tigris altaica*).

It said the findings suggested that captive tigers, such as those found in zoos and theme parks, were finding their way into the illegal wildlife trade where they are butchered for traditional medicine.

‘Swift and severe action must follow,’ MyCat said. ‘If we cannot stop captive tigers from government-supervised institutions from being illegally traded, there is little hope of protecting wild tigers,’ it said.

Malaysia is estimated to have just 500 tigers still living in the wild. The loss of such a species can have a damaging effect on the ecosystem which is why many environmentalists are also concerned.

Source: AFP / DAWN.com 15 July 2009

Lonesome George - Last Hope for His Species? - Lonesome George - the last remaining giant tortoise of his kind - may soon be a father at the age of 90. Lonesome George is the last of the Pinta Island Tortoise (*Geochelone nigra abingdoni*), one of the 11 subspecies of Galapagos tortoise. Galapagos tortoises were among the species Charles Darwin observed to formulate his theory of evolution in the 19th century.

For decades, the last known Pinta island tortoise had shown little interest in reproducing. But after nine decades, George is said to be in his sexual prime. Scientist have been trying to get George to mate since 1993, when they introduced two female tortoises of a different subspecies into his pen. Unhatched eggs have been found in his “bachelor” pen in the Galapagos Islands, his keepers said. In late July The Galapagos National Park reported that five eggs “in perfect condition” were found and have been placed in an incubator. “Now we have to wait for the incubation period of 120 days to find out whether they are fertile,” it said in a statement.



Lonesome George at age 90 may become a father for the first time in October.

(Photo courtesy of Charles Darwin Foundation)

The 198-pound (90kg) George stunned conservationists last year by mating for the first time in the 36 years he has been in captivity. But the eggs laid by one of his female companions turned out to be infertile.

Tortoises were hunted for their meat by sailors and fishermen to the point of extinction, while their habitat has been eaten away by goats introduced from the mainland. Some 20,000 giant tortoises still live on the Galapagos. Source: SkyNews.com 22 July 2009

Kenya Seizes Ivory, Rhino Horn Heading to Asia - In mid-July wildlife officials reported that they had seized more than 300 kilograms (660 pounds) of illegal ivory and black rhinoceros horn some it still bloody — on a cargo plane headed to Asia. The blood on some of the 16 elephant tusks and two rhino horns suggested the animals had been killed recently, said Patrick Omondi of the biodiversity and research division of the Kenya Wildlife Service.

The contraband was hidden in wooden boxes shaped like coffins. The flight originated in Mozambique and stopped in Nairobi en route to Thailand and finally Laos. It was not clear where the items came from; Omondi said they could have been smuggled into Mozambique from Tanzania or South Africa.

Poaching elephants and black rhinos is illegal. The Convention on International Trade in Endangered Species banned trade in ivory in 1989 after a wholesale slaughter of African elephants by poachers in of the 1970s and 1980s. But some countries have done little to enforce the ban.

The black rhino is only found in eastern and southern Africa. Rampant poaching decimated the black rhino population from a high of 65,000 across Africa in the 1970s. Southern Africa now has a population of 3,600 black rhinos. Source: Tom Odula/AP 14 July 2009

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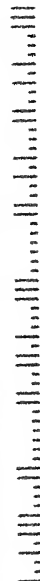
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